

REMARKS

This paper is responsive to an Office Action dated May 4, 2005. Prior to this amendment claims 16-21 were pending. After canceling claims 16-19, amending claim 20, and adding claims 22-30, claims 20-30 remain pending.

Section 4 of the Office Action states that claims 16-21 have been rejected under 35 U.S.C. 103(a) with respect to Kittl et al. ("Kittl"; US 2002/0045307) in view of Chapman (US 6,010,929). Claims 16-19 have been canceled. With respect to claims 20 the Office Action states that Kittl shows a gate oxide length that is about twice as long as the region of substrate located between regions 410 (Figs. 4b and 4c). The Office Action acknowledges that Kittl fails to teach the claimed ion concentrations, but states that Chapman does teach the recited ion concentrations, and that it would have been obvious to combine references to make claim 20 obvious. The Office Action states that the motivation to combine references would be to reduce short channel effects. This rejection is traversed as follows.

An invention is unpatentable if the differences between it and the prior art would have been obvious at the time of the invention. As stated in MPEP § 2143, there are three requirements to establish a *prima facie* case of obviousness.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when

combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck* 947 F.2d 488, 20 USPQ2d, 1438 (Fed. Cir. 1991).

With respect to the first *prima facie* requirement, if the motivation to combine stems from the desire to reduce short channel effects, then there must be some evidence in at least one of the references to support such a statement. Kittl describes a process for forming silicide gate, source, and drain structures [0013]. The word "channel" does not even appear in the document. Neither does Chapman raise the problem of short channel effects. The desirability of mitigating short channel effects does not address the issue of whether there is a motivation to combine references.

The issue of motivation does not concern itself with whether there is some element of commonality between references, or whether it might be useful to combine references in retrospect. If it did, then any two references could be combined merely as the result of a common keyword. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion of motivation in the references to do so." *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990). Here, the analysis must determine if there is any motivation to modify Kittl's structure, in view of Chapman, in such a manner as to teach the claimed invention. It is possible that Chapman may provide a motivation to modify the ion concentrations in Kittl's silicide processes. However, the claimed invention is not an improved silicide process. Alternately stated, even if there is a motivation

to combine the Chapman with Kittl, the invention suggested is not the claimed invention.

Considered from the perspective of the second *prima facie* requirement, even if an expert were given the Kittl and Chapman inventions as a foundation, there is no reasonable expectation that this expert could derive the claimed invention limitations.

With respect to the third *prima facie* requirement, the combination of references does not teach all the elements of claim 20. The Office Action states that Kittl shows a gate oxide length that is about twice as long as the region of substrate located between regions 410 (Figs. 4b and 4c). To clarify the invention, claim 20 has been amended to recite that the gate oxide length is at least 5 times the length of the gate region, as shown in Fig. 5. Neither of the prior art references teaches a gate oxide length that is at least 5 times greater than the gate region. Therefore, the prior art references do not describe all the limitations of claim 20, as amended. Neither do the prior art references suggest a modification that makes the limitations of claim 20 obvious. Claim 21, dependent from claim 20, enjoys the same distinctions from the cited prior art, and the Applicant requests that the rejection be removed.

It is believed that the application is in condition for allowance and reconsideration is earnestly solicited.

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Respectfully submitted,

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